CLAIMS

1. A device for tuning a reflector component (2) formed in a portion (4) of an optical waveguide (6) including first and second ends, this optical waveguide being intended for propagating a light, the reflector component being capable of reflecting this light at a reflection wavelength, this device comprising

- means (8) for compressing the optical waveguide portion and therefore the reflector component, in order to change the reflection wavelength, and

- prevention means (10) for preventing the buckling of the optical waveguide portion when the latter is compressed,

this device being characterized in that the prevention means (10) comprise

- a tube (14) with first and second ends, this tube being crossed by the optical waveguide portion, and

- means (32-34, 56-58) for guiding this portion in the tube,

and the compression means (8) comprise

- a curved deformable component (12), with first and second sides, the first respective ends of the tube (14) and the optical waveguide portion (4) being attached to the first side, the second end of the tube being spaced apart from the second side and the second end of the optical waveguide portion being attached to this second side, and

- a piezoelectric actuator (20-22), positioned in a space between the curved deformable component (12) and the tube (14), and attached to this component and to this tube, this actuator being capable of extending

when it is energized and then deforming the component, the latter being then capable of compressing the optical waveguide portion.

2. The device according to claim 1, wherein the reflector component is a Bragg grating (2).

3. The device according to any of claims 1 and 2, wherein the optical waveguide is an optical fiber (6).

4. The device according to any of claims 1 to 3, wherein the compression means (8) have an axis of symmetry which is formed by the axis (X) of the optical waveguide portion (4).

5. The device according to any of claims 1 to 4, wherein the guiding means comprise rings (32) which extend one after the other in the tube (14), are spaced apart from one another by elastic components (34), preferably elastic toric spacers, and crossed by the optical waveguide portion (4), this optical waveguide portion (4) being capable of freely sliding in these rings.

6. The device according to claim 5, wherein the elastic components (34) are in honeycombed polytetrafluoroethylene.

7. The device according to any of claims 1 to 4, wherein the guiding means comprise stiff washers (56) which are placed one after the other in the tube (14), along the optical waveguide portion (4), and are

crossed by this optical waveguide portion, and elastic components (58) which extend one after the other in the tube, alternate with stiff washers and are integral with these stiff washers.

8. The device according to claim 7, wherein the elastic components (58) form a single block of elastic material which confines the optical waveguide portion (4).

9. The device according to any of claims 1 to 8, further comprising means (26) for controlling the piezoelectric actuator (20-22) in a closed loop configuration.

10. The device according to claim 9, wherein the control means comprise measuring means comprising the Bragg grating (2) or a variable capacitor with two plates (38, 40) which are integral with the tube (14) and the deformable component (12), respectively.

11. The device according to any of claims 1 to 10, further comprising means (48, 50) for blocking the deformable component (12).

12. The device according to claim 11, wherein the blocking means comprise a component (48) which is made out of a shape memory alloy and capable of tightening the tube (14).